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For Psychological Health & Traumatic Brain Injury

**Today's webinar is:**

# **Improving Violence Risk Assessment Among Service Members and Veterans**

**June 27, 2013, 1-2:30 p.m. (EDT)**

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# Improving Violence Risk Assessment Among Service Members and Veterans

Research has suggested that service members and veterans returning from Afghanistan and Iraq are at risk of developing psychological health disorders, such as posttraumatic stress disorder, depression and substance abuse. These disorders have been linked to increased risk of violence among veterans of previous wars.

Patients with psychological health disorders are more likely to use health care services more frequently than patients without psychological health disorders. Health care providers have a unique opportunity to identify, treat and refer patients in need of mental health services, improving the ability to detect those at highest risk of committing violence.

This webinar will:

- Conceptualize the process of violence risk assessment in military veterans
- Review up-to-date scientific literature on post-deployment aggression
- Integrate new data on aggression in veterans from a national sample
- Discuss how rehabilitation can help reduce aggression in veterans

# Improving Violence Risk Assessment Among Service Members and Veterans

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# Disclaimer:

This research was supported by a grant from the National Institute of Mental Health (R01MH080988).

I have no relevant financial relationships to disclose.

# Objectives:

1. Conceptualize the process of violence risk assessment in military veterans.
2. Review up-to-date scientific literature on post-deployment aggression.
3. Integrate new data on aggression in veterans from a national sample.
4. Discuss how rehabilitation can help reduce aggression in veterans.

# Violence and Veterans

- Media accounts highlight challenges veterans face in their transition back to civilian life, resulting sometimes in anger and aggression.
- Recent studies indicate aggression toward others is a significant problem reported by up to one-third of Afghanistan and Iraq veterans.

# Findings from VISN6 MIRECC

- Post-deployment aggressiveness was associated with Posttraumatic Stress Disorder (PTSD) hyperarousal symptoms:
  - Sleep problems
  - Difficulty concentrating
  - Irritability
  - Jumpiness
  - Being on guard
- Other PTSD symptoms, as well as Traumatic Brain Injury (TBI), were less consistently connected.

# Findings from VISN6 MIRECC

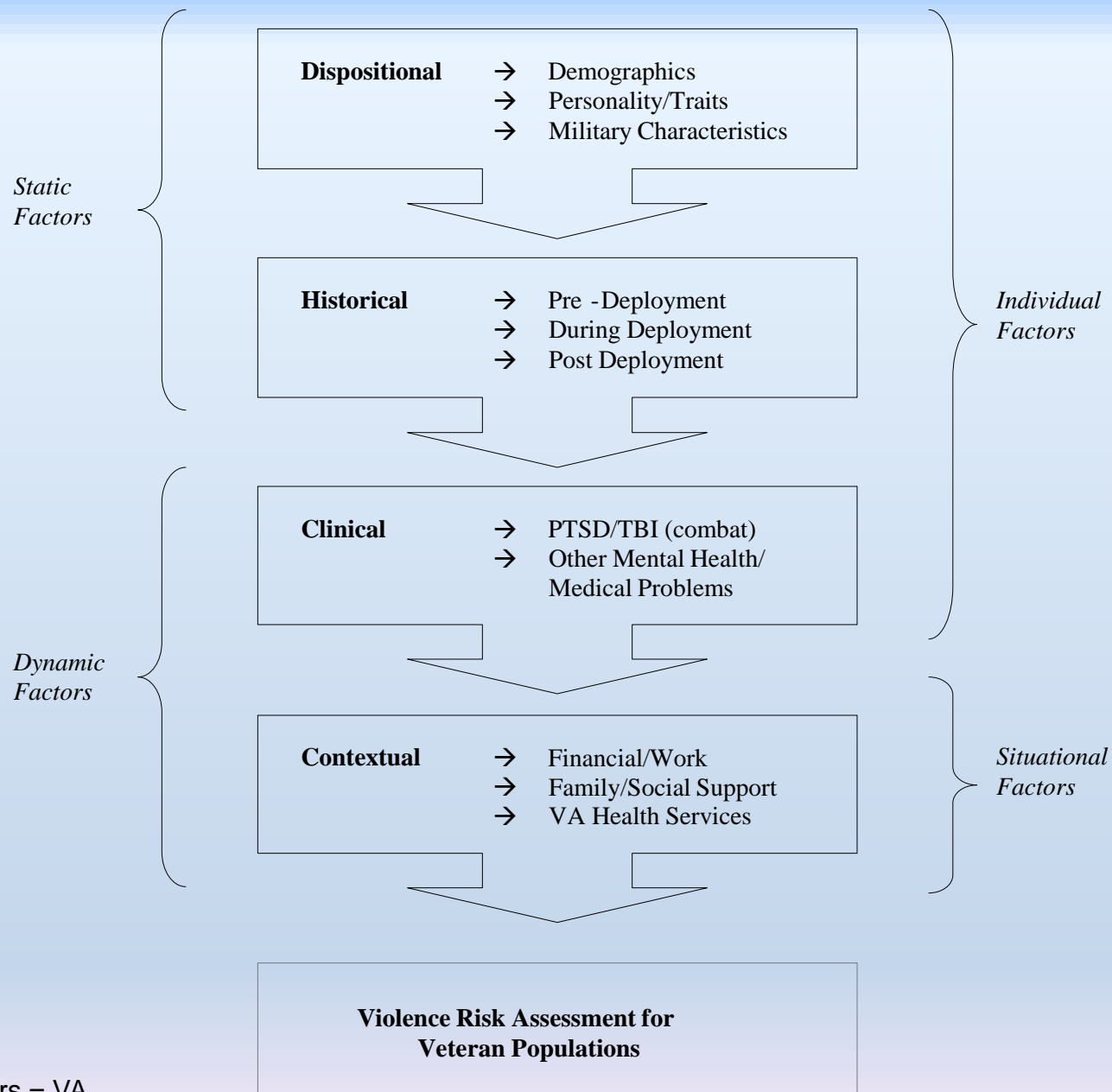
- Different Types of Aggressiveness related to Different Factors:
  - Problems Managing Anger linked to *relationships*, (e.g., being married).
  - Aggressive Impulses/Urges linked to *mental health* (e.g., family mental illness).
  - Problems Controlling Violence linked to *violence exposure* (e.g., witnessing violence, firing weapon).

# Risk Assessment

- Clinicians perform only modestly better than chance when assessing violence.
- Increasing need to improve ability to detect veterans at highest risk.
- To do so, clinicians should examine empirically supported risk factors and use structured decision-aides or risk assessment tools validated in civilians.

# Risk Assessment

- To reduce errors, clinicians need to make decision-making more systematic, using decision-aides or checklists:
  - To ensure all important information is gathered in the course of diagnosis and treatment
  - To reduce chances of overlooking critical data in time-pressured clinical practice



# Risk Factors in Veterans

<b>Risk Domain</b>	<b>Risk Factors for Intimate Partner/ Domestic Violence</b>	<b>Related to Both Types of Violence</b>	<b>Risk Factors for General Interpersonal Violence</b>
Dispositional	Younger age	✓	Younger age
			Lower education level
Historical	Past violent behavior	✓	Past violent behavior
	Combat exposure (atrocities, perceived threat)	✓	Combat exposure (killing/seeing killings)
	Chaotic family life growing up		Witnessed violence growing up
	Maltreatment/abuse as a child	✓	Abuse/maltreatment as a child

# Risk Factors in Veterans

<b>Risk Domain</b>	<b>Risk Factors for Intimate Partner/ Domestic Violence</b>	<b>Related to Both Types of Violence</b>	<b>Risk Factors for General Interpersonal Violence</b>
Clinical	Meets criteria for PTSD	✓	Meets criteria for PTSD
	Severe PTSD symptoms	✓	Severe PTSD symptoms
	Substance abuse	✓	Substance abuse
	Depression	✓	Depression
	Personality disorder		TBI
			Higher levels of anger
Contextual	Financial status (unemployment)	✓	Financial status (lower socio-economic status and income)
	Marital/relationship problems		
	Shorter/newer marriages		
	Children in the home		

# National Post-Deployment Adjustment Survey

- In May 2009, a random sample of 3,000 names and addresses drawn by the VA Environmental Epidemiological Service of separated individuals who served in the U.S. military on or after September 11, 2001.
- In total, n=1,388 OEF/OIF military service members completed a web-based survey on post-deployment adjustment, representing a 56% corrected response rate.

# National Post-Deployment Adjustment Survey

- The resulting sample included OEF/OIF/OND veterans from all branches of the military and the reserves.
- Participants resided in all 50 states, Washington D.C. and four territories.
- Responders were similar to non-responders in age, gender and geographic region.

# Independent Variables

- Demographics: education, age, gender, race, income.
- Historical: witnessing family violence, physically punished as child, history arrest (veteran/family).
- Military: rank, NDHS combat experiences, length and number of deployments.
- Clinical: PTSD (Davidson Trauma Scale), alcohol misuse (AUDIT), Traumatic Brain Injury (TBI), major depression (PHQ9).
- Functional Domains: work, homelessness, ability to pay for basic needs, back pain, sleep problems, resilience (CD-RISC), social support.

# Dependent Variables

- Severe Violence (past year)
  - *Conflict Tactics Scale*: “Used a knife or gun”; “Beat up the other person” or “Threatened the other person with a knife or gun”
  - *MacArthur Community Violence Interview*: “Did you threaten anyone with a gun or knife or other lethal weapon in your hand?”; “Did you use a knife or fire a gun at anyone?”; “Did you try to physically force anyone to have sex against his or her will?”
- Other Physical Aggression (past year)
  - Other items indicating physical aggression including kicking, slapping and using fists.

# Demographic Data

- We oversampled women veterans (33%) and weighted analyses according to actual military figures (16%).
- Average age – 33 years.
- 80% reported post-high school education.
- 70% were Caucasian.
- 78% reported some current employment.

# Historical/Military Data

- 7% reported witnessing parental violence.
- 10% reported a history of arrest before deployment.
- 16% ranked officer or higher.
- 27% reported spending more than a year in Afghanistan/Iraq.
- 27% reported more than one deployment.
- Average time since deployment – 4.5 years.

# Clinical Data

- 2% reported moderate to severe TBI.
- 15% reported mild TBI.
- 20% met criteria for PTSD.
- 24% met criteria for major depressive disorder.
- 27% met criteria for alcohol misuse.

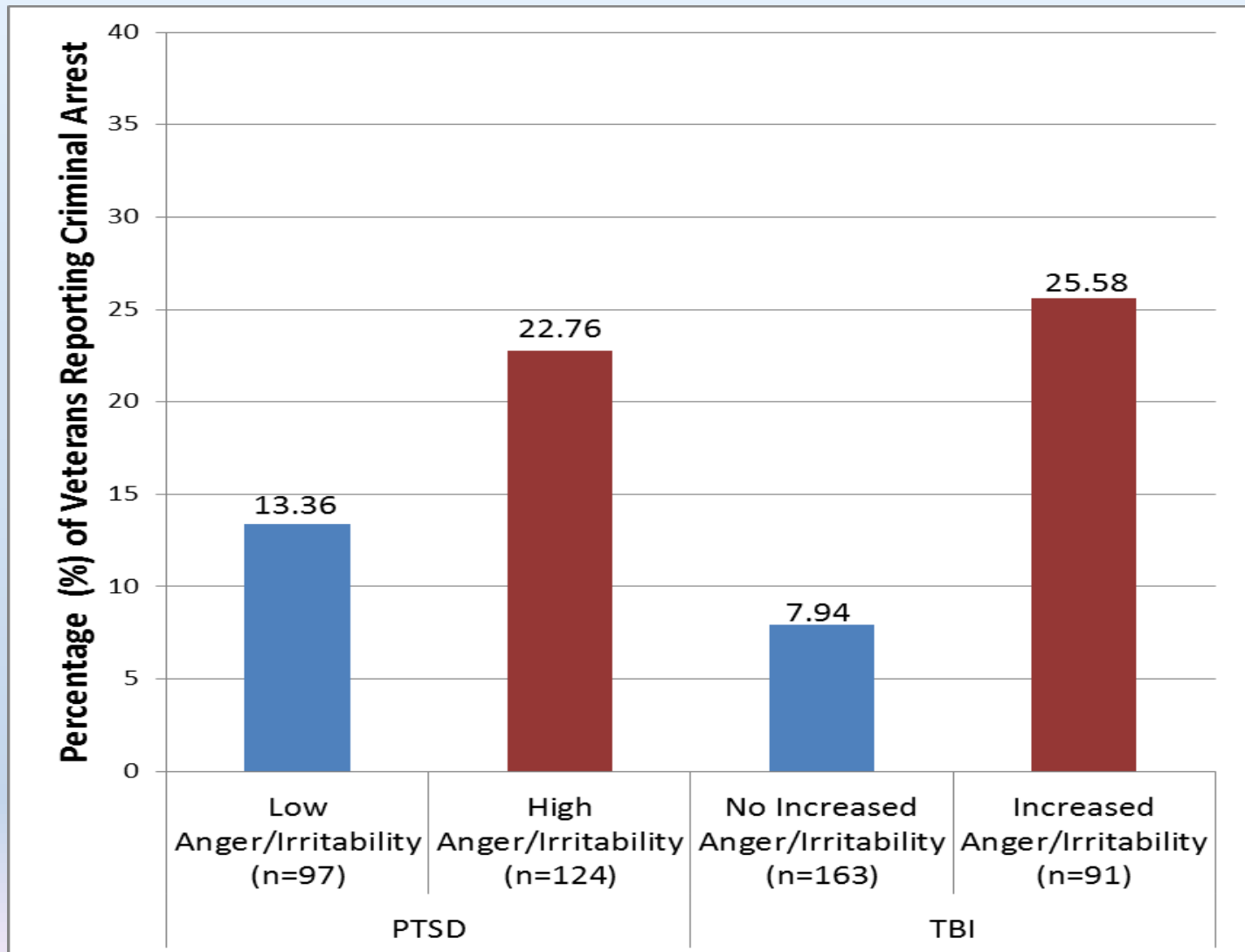
# Violence / Aggression

- **11%** reported incidents of severe violence in the past year.
- **32%** reported other physical aggression in the past year.
- **Bivariate analyses** indicates both linked to:
  - Younger Age
  - Combat Involvement
  - Depression
  - Alcohol Misuse
  - PTSD
  - mTBI
  - Arrest History

# PTSD and Violence in Veterans

Risk Factor		Severe Violence in Next Year	Statistical Significance
PTSD	Yes	19.52%	yes
	No	6.41%	
Alcohol Misuse	Yes	17.43%	yes
	No	5.97%	
PTSD + Alcohol Misuse	Yes	35.88%	yes
	No	6.84%	
Alcohol Misuse Only	Yes	10.57%	no
	No	8.37%	
PTSD Only	Yes	9.96%	no
	No	8.61%	

# PTSD, TBI, Negative Affect and Criminal Justice Involvement in Veterans



# Stranger Aggression

Effect of PTSD Symptoms and Covariates on Stranger Aggression						
	Stranger Aggression			Severe Stranger Violence		
Variable	OR	95% CI	p	OR	95% CI	p
Older Age (>35)	0.97	[0.94, 0.99]	.0106			ns
Gender <sup>a</sup>	3.41	[1.16, 10.08]	.0264			ns
High Combat	2.47	[1.39, 4.37]	.002	2.58	[1.14, 5.85]	.0234
Substance Misuse	2.52	[1.53, 4.16]	.0003	2.93	[1.45, 5.88]	<.0001
Witnessed Family Violence			ns			ns
History of Arrest			ns			ns
PTSD Anger			ns			ns
PTSD Flashback	1.16	[1.05, 1.28]	.0029	1.26	[1.11, 1.42]	<.0001
PTSD On Guard			ns			ns
PTSD Numb			ns			ns
PTSD Physically Upset			ns			ns
<sup>a</sup> Female = 0, Male = 1	R <sup>2</sup> =.17, AUC=.79 $\chi^2=75.38$ , df=5, $p<.0001$			R <sup>2</sup> =.20, AUC=.82 $\chi^2=54.36$ , df=3, $p<.0001$		

# Family Aggression

Effect of PTSD Symptoms and Covariates on Family Aggression						
	Family Aggression			Severe Family Violence		
Variable	OR	95% CI	p	OR	95% CI	p
Older Age (>35)	0.98	[0.95, 1.00]	.0221	0.94	[0.89, 0.99]	.0046
Gender <sup>a</sup>			ns	0.36	[0.14, 0.96]	.0347
High Combat			ns	3.96	[1.30-12.02]	.0153
Substance Misuse			ns			ns
Witnessed Family Violence			ns			ns
History of Arrest			ns			ns
PTSD Anger	1.28	[1.19, 1.37]	<.0001	1.30	[1.13, 1.48]	<.0001
PTSD Flashback			ns			ns
PTSD On Guard			ns			ns
PTSD Numb			ns			ns
PTSD Physically Upset			ns			ns
<sup>a</sup> Female = 0, Male = 1	R <sup>2</sup> =.11, AUC=.71 $\chi^2=53.85$ , df=2, p<.0001			R <sup>2</sup> =.19, AUC=.80 $\chi^2=41.34$ , df=4, p<.0001		

# Protective Factors and Violence

	<i>n</i>	Violent <i>n</i>	%	$\chi^2$	p-value
<i>Domains</i>					
<b>Sleep Problems</b>					
No	796	60	7.58	30.28	<.0001
Yes	305	58	19.06		
<b>Basic Needs Met</b>					
Yes	646	47	7.33	19.29	<.0001
No	455	71	15.65		
<b>Resilience</b>					
Above Median	562	45	8.10	8.49	0.0036
Below Median	538	73	13.55		
<b>Social Support</b>					
Satisfied	654	46	7.06	23.04	<.0001
Not Satisfied	447	72	16.19		

# Protective Factors and Violence

		<i>n</i>	Violent <i>n</i>	%	$\chi^2$	p-value
<i>Domains</i>						
	<b>Back Pain</b>					
	No	659	49	7.48	18.45	<.0001
	Yes	442	69	15.67		
	<b>Homeless Past Year</b>					
	No	1051	100	9.52	36.87	<.0001
	Yes	50	18	36.0		
	<b>Work Past Year</b>					
	Yes	862	77	8.96	13.43	0.0002
	No	239	41	17.25		

# Multivariate: Severe Violence

	<i>OR</i>	<i>CI</i>	<i>p</i>
<b>Age</b>	0.960	0.928–0.985	0.003
<b>Sex</b>	0.956	0.819–3.309	0.161
<b>Race</b>	0.699	0.447–1.093	0.116
<b>Physical &amp; Mental Injury/Distress<sup>1</sup></b>	2.754	1.671–4.539	<.001
<b>Economic &amp; Social Attainment<sup>2</sup></b>	0.8	0.628–1.019	0.070
<b>Combat Exposure<sup>3</sup></b>	1.467	0.935–2.301	0.095
<b>Family History<sup>4</sup></b>	1.359	0.668–2.761	0.397
<b>Criminal /Risk Behaviors<sup>5</sup></b>	2.941	1.681–5.148	<.001
<b>Support and Resilience<sup>6</sup></b>	0.896	0.556–1.445	0.653

$$R^2=.20, \chi^2=184.27, df=9, p<.0001$$

**Cluster 1:** PTSD, Depression, Sleep, Back Pain, mTBI.

**Cluster 2:** Education, Income, Married, Money to Cover Basic Needs, Reserves, Rank>Officer, Employed.

**Cluster 3:** Multiple Deployments, Over a Year Deployed, NDHS Combat Exposure Scale>median.

**Cluster 4:** History of Witnessing Family Violence, Physical Punishment, Parental Criminal Arrest History

**Cluster 5:** History of Criminal Arrest, Homeless in Past Year, Alcohol/Drug Misuse.

**Cluster 6:** CD RISC score>median, QLI scored satisfied with family/friend support.

# Multivariate: Other Aggression

	<i>OR</i>	<i>CI</i>	<i>p</i>
Age	0.971	0.955–0.988	0.0007
Sex	0.872	0.584–1.3	0.5005
Race	0.882	0.644–1.206	0.4302
Physical & Mental Injury/Distress <sup>1</sup>	1.976	1.377–2.834	0.0002
Economic & Social Attainment <sup>2</sup>	0.841	0.714–0.99	0.0373
Combat Exposure <sup>3</sup>	1.511	1.102–2.074	0.0105
Family History <sup>4</sup>	1.359	0.816–2.264	0.239
Criminal /Risk Behaviors <sup>5</sup>	2.39	1.533–3.726	0.0001
Support and Resilience <sup>6</sup>	0.527	0.388–0.718	<.0001

$$R^2=.20, \chi^2=184.27, df=9, p<.0001$$

**Cluster 1:** PTSD, Depression, Sleep, Back Pain, mTBI.

**Cluster 2:** Education, Income, Married, Money to Cover Basic Needs, Reserves, Rank>Officer, Employed.

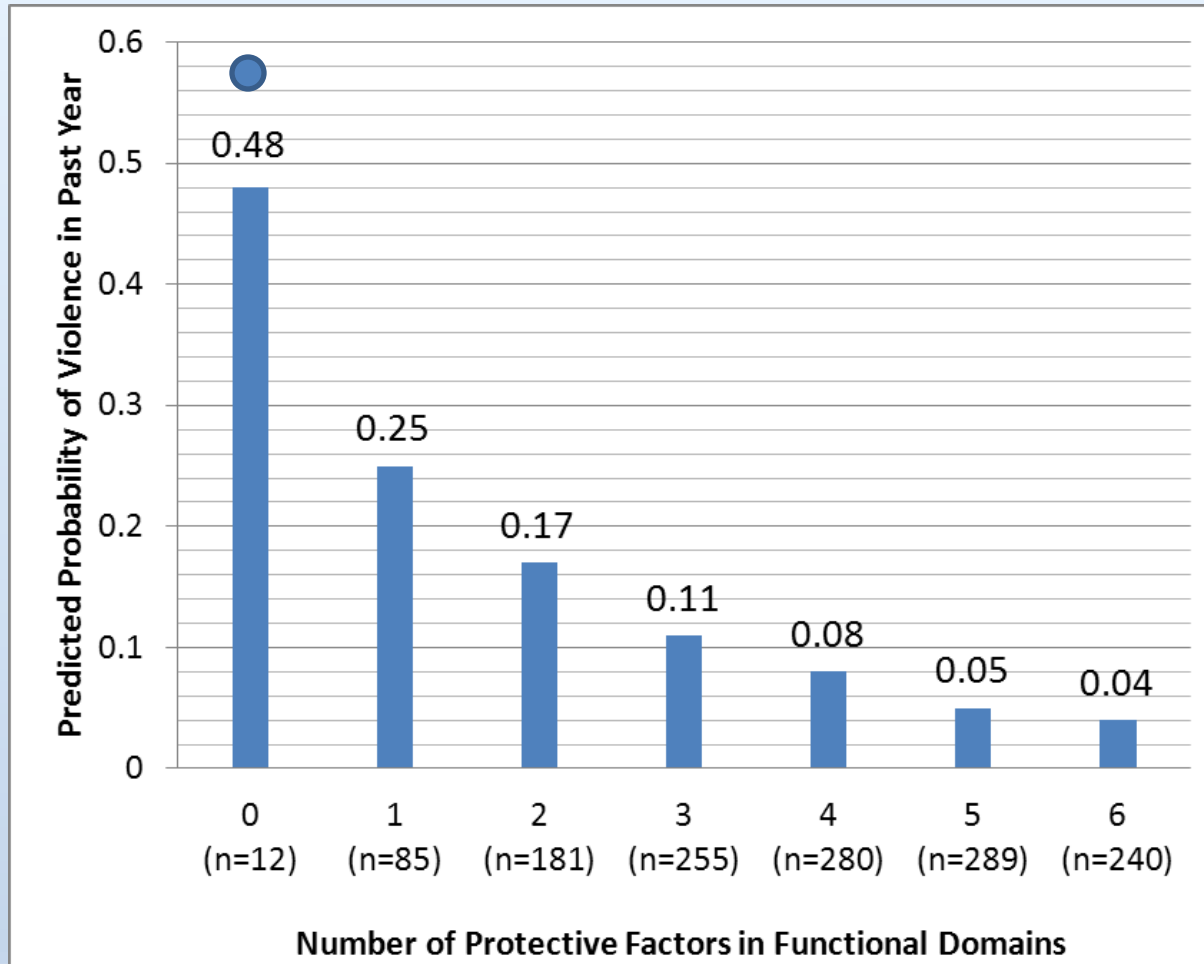
**Cluster 3:** Multiple Deployments, Over a Year Deployed, NDHS Combat Exposure Scale>median.

**Cluster 4:** History of Witnessing Family Violence, Physical Punishment, Parental Criminal Arrest History

**Cluster 5:** History of Criminal Arrest, Homeless in Past Year, Alcohol/Drug Misuse.

**Cluster 6:** CD RISC score>median, QLI scored satisfied with family/friend support.

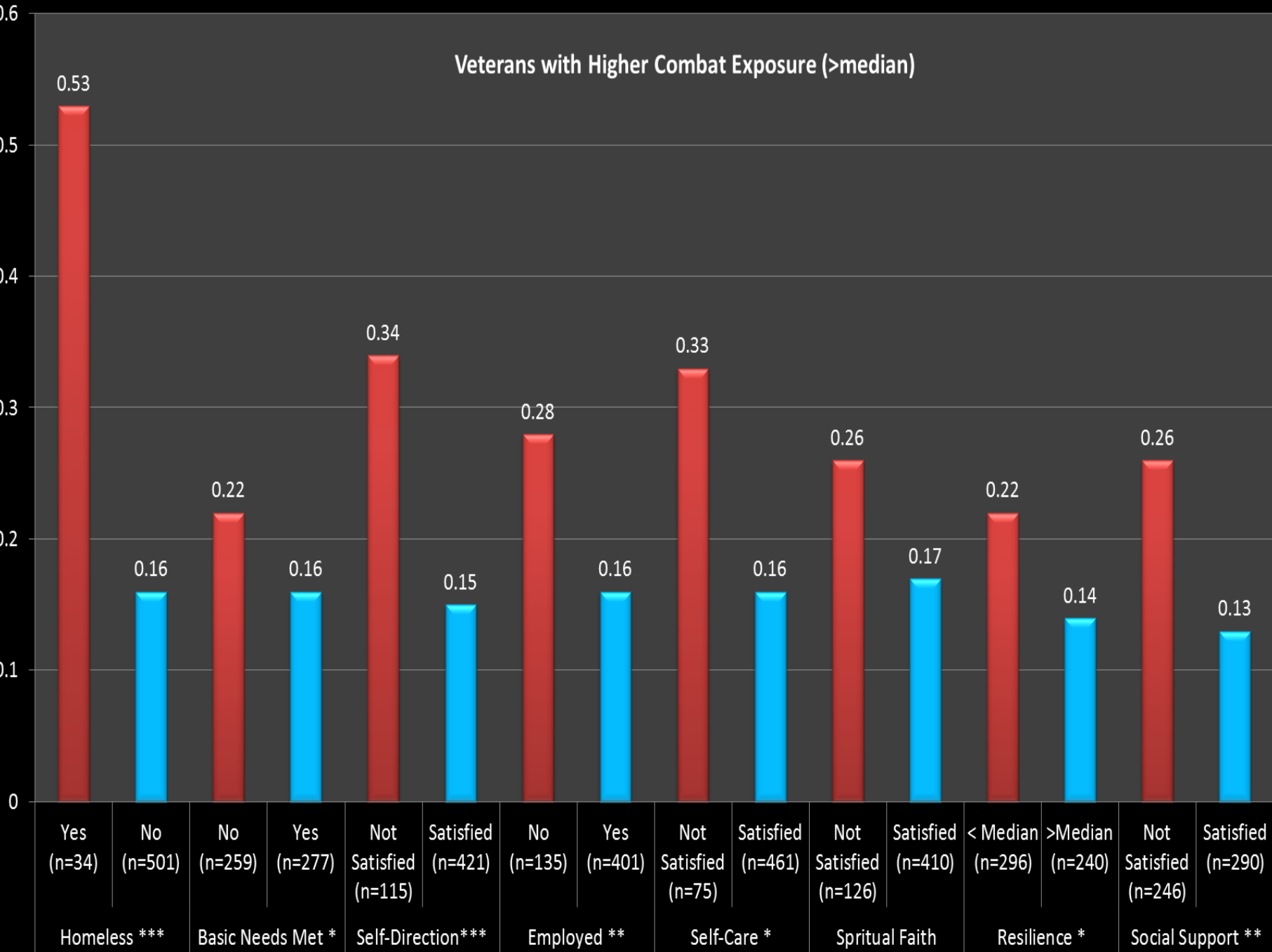
# Protective Factors and Severe Violence



Protective factors connote adaptive levels of functioning in the following domains: living stability, current work, financial stability, psychological resilience, physical well-being (good sleep/low pain), social support.

# Veterans with Higher Combat Exposure (>median)

Predicted Probability of Severe Violence in Past Year



\* p<.05; \*\* p<.01; \*\*\*p<.001

# **A Subset of Veterans Has Problems with Violence**

- Findings reveal a subgroup of veterans who report recent serious violence such as use of a weapon or beating another person (11%) in a one-year time frame.
- In the same period, a higher number of veterans report less severe physically aggressive incidents such as shoving or pushing others (32%).

# **The Link Between PTSD and Violence in Veterans Is Complex**

- Most veterans with PTSD reported no violence or problems with aggression.
- PTSD and combat exposure were associated with a higher rate of violence.
- Veterans with PTSD who did not misuse alcohol were 72% less likely to report severe violence in the next year than veterans with PTSD who misused alcohol.
- Specific PTSD symptoms also accounted for increased risk of violence.

# **Non-PTSD Risk Factors Need to Be Considered**

- Risk factors related to violence and aggression in veterans, same as in civilian populations:
  - Criminality (e.g., history of arrest before military service)
  - Economic and social attainment (e.g., not having money to meet basic needs)
  - Demographics (e.g., younger age)

# Protective Factors Can Be Targeted to Manage Risk

- Protective factors found to be associated with reduced violence in veterans.
- In addition to treating mental health and substance abuse problems, promising rehabilitation approaches to reduce violence risk would target domains of:
  - Basic functioning (living, financial, vocational)
  - Well-being (social, psychological, physical)

# Process for Assessing Risk

1. Identify service member/veteran's individual definition of anger and aggression problems.
2. Consider use of risk assessment tools with caveat of limited validation in military/veteran populations.
3. Assess violence risk in a structured way relying on empirically supported risk factors, both static and dynamic, in military/veteran populations.
4. Consider role of PTSD but also go beyond diagnosis and assess underlying symptoms and other risk factors.
5. Bolster protective factors in the environment, including physical health, psychological well-being and social/occupational functioning.

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# Thank you, questions?

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